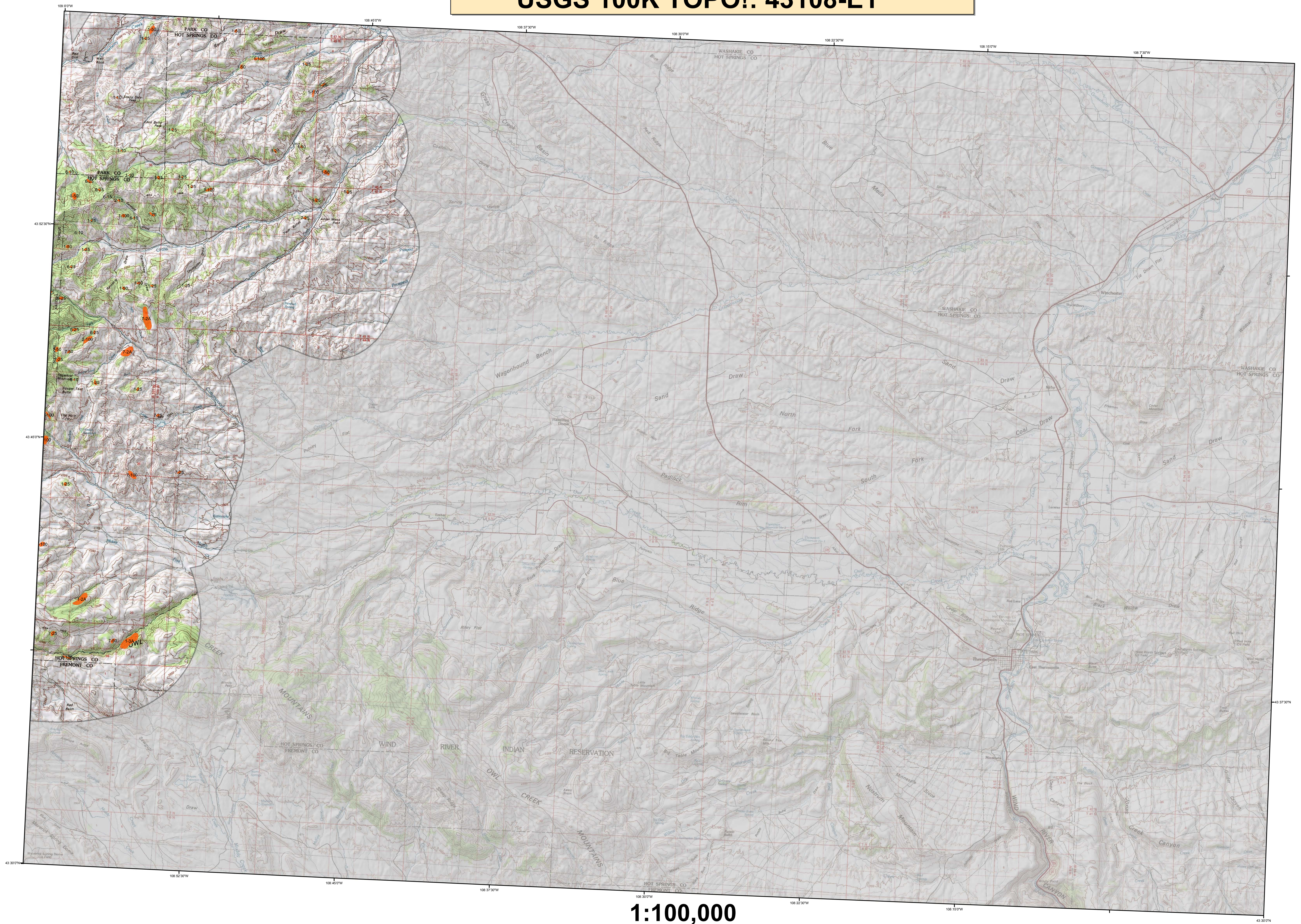


**2006 Aerial Insect and Disease Survey
Thermopolis, Wyoming
USGS 100K TOPO!: 43108-E1**



1:100,000

Legend

Causal Agent(s) Not Flown in 2006

Example: 5-25 = The first number before the dash is the causal agent code

Example: 5-25 = The first number before the dash is the causal agent code. The number after the dash is the number of dead "fader" trees in the polygon or plot. When recent dead trees are not counted, an intensity code of L-light, M-moderate, and H-high may be used after the causal agent code. Periodically, trees per acreage estimates are used after the causal agent code instead of number of dead "fader" trees (or an intensity code). For example: 5-1/2A = The first number before the dash is the causal agent code. The number after the dash is an estimation of the number of dead "fader" trees in the polygon per acre. In this case it would be an estimation that, on the average, one tree per every two acres would be a dead "fader" tree. In another example: 5-3A = that on the average, an estimated three trees per acre are dead "fader" trees. A / is used as a separator when a point polygon has more than one causal agent code.

Code	Causal Agent	Primary Host	Code	Causal Agent	Primary Host	Code	Causal Agent	Primary Host
10	Douglas fir beetle	Douglas fir	40	Arthropods	Logdoge Pine	107	How to source logging	Western Poplar
11	Engelmann Spruce Beetle	Engelmann Spruce	41	51 White pine blister rust	All Tree Species	108	How to source logging	Western Poplar
12	Mountain pine beetle	Ponderosa Pine	42	Dwarf mistle	Softwoods	109	How to source logging	Softwoods
13	Mountain pine beetle	Logdoge Pine	43	Phytoplasma	Ponderosa Pine	110	How to source logging	Softwoods
14	Mountain pine beetle	5-Needle Pine	44	8 Includes 805, 805 & 88	All Tree Species	111	How to source logging	White Oak
15	Western pine beetle	Ponderosa Pine	45	Apk pollinators	All Tree Species	112	How to source logging	All Tree Species
16	White fir	White fir	46	Chemical damage	All Tree Species	113	How to source logging	All Tree Species
107	Douglas fir engraver beetle	Douglas fir	47	Lophodermium prasinii	Logdoge Pine	114	How to source logging	Softwoods
108	Douglas fir bark beetle	Logdoge Pine	48	Lophodermium prasinii	Logdoge Pine	115	How to source logging	Softwoods
109	Unidentified bark beetle	Softwoods	49	Lophodermium acutatum	Softwoods	116	How to source logging	All Tree Species
110	Pine engraver	Logdoge Pine	50	Leucostoma	Softwoods	117	How to source logging	All Tree Species
111	Pine engraver	Logdoge Pine	51	Lophodermium concolor	Softwoods	118	How to source logging	All Tree Species
112	Ponderosa pine needle miner	Logdoge Pine	52	Didymopanax	Herbicide	119	How to source logging	All Tree Species
113	Ponderosa pine needle miner	Ponderosa Pine	53	Needle cast (hypodermatomyces)	All Tree Species	120	How to source logging	Quaking Aspen
114	Jack pine budworm	Jack Pine	54	Root Rot	All Tree Species	121	How to source logging	Aspen
115	Spruce budworm, light defol.	Spruce budworm	55	Unidentified disease	Softwoods	122	How to source logging	Aspen
116	Spruce budworm, medium defol.	Spruce budworm	56	Winter damage light	All Tree Species	123	How to source logging	Aspen
117	Spruce budworm, heavy defol.	Douglas fir	57	Winter damage medium	All Tree Species	124	How to source logging	Cottbwood
118	Pine bark beetle	Douglas fir	58	Winter damage heavy	All Tree Species	125	How to source logging	Cottbwood
119	Pine Butterfly	Ponderosa Pine	59	Diploids	Softwoods	126	How to source logging	Oak
120	Pine bark beetle	Ponderosa Pine	60	Common Pine	Common Pine	127	How to source logging	Hardwood Cedar
121	Pine fire	Ponderosa Pine	61	Fire	All Tree Species	128	How to source logging	Eastern Red Cedar
122	Tent caterpillar	Hardwoods	62	Parasitic	Softwoods	129	How to source logging	Softwoods
123	Oak leaf roller	Hardwoods	63	High water	All Tree Species	130	How to source logging	Hardwoods
124	Pine spruce needle mine	Ponderosa Pine	64	Aspen decline	Quaking Aspen	131	How to source logging	Softwoods
125	Pine sawflies	Ponderosa Pine	65	Aspen decline-multiple agents	Quaking Aspen	132	How to source logging	Softwoods
126	Pine budworm moth	Hardwoods	66	Pinyon pine	Common Pine	133	How to source logging	Softwoods
127	Variable oak leaf caterpillar	Hardwoods	67	Unidentified (multiple agents)	Gambel Oak	134	How to source logging	Hardwoods
128	Variable oak leaf caterpillar	Hardwoods	68	Gambel oak decline-multiple agents	Gambel Oak	135	How to source logging	Hardwoods
129	Variable oak leaf caterpillar	Hardwoods	69	Unidentified (multiple agents)	Unidentified (multiple agents)	136	How to source logging	Hardwoods
130	Variable oak leaf caterpillar	Hardwoods	70	Unidentified (multiple agents)	Unidentified (multiple agents)	137	How to source logging	Hardwoods
131	Variable oak leaf caterpillar	Hardwoods	71	Unidentified (multiple agents)	Unidentified (multiple agents)	138	How to source logging	Hardwoods
132	Variable oak leaf caterpillar	Hardwoods	72	Unidentified (multiple agents)	Unidentified (multiple agents)	139	How to source logging	Hardwoods
133	Variable oak leaf caterpillar	Hardwoods	73	Unidentified (multiple agents)	Unidentified (multiple agents)	140	How to source logging	Hardwoods
134	Variable oak leaf caterpillar	Hardwoods	74	Unidentified (multiple agents)	Unidentified (multiple agents)	141	How to source logging	Hardwoods
135	Variable oak leaf caterpillar	Hardwoods	75	Unidentified (multiple agents)	Unidentified (multiple agents)	142	How to source logging	Hardwoods
136	Variable oak leaf caterpillar	Hardwoods	76	Unidentified (multiple agents)	Unidentified (multiple agents)	143	How to source logging	Hardwoods
137	Variable oak leaf caterpillar	Hardwoods	77	Unidentified (multiple agents)	Unidentified (multiple agents)	144	How to source logging	Hardwoods
138	Variable oak leaf caterpillar	Hardwoods	78	Unidentified (multiple agents)	Unidentified (multiple agents)	145	How to source logging	Hardwoods
139	Variable oak leaf caterpillar	Hardwoods	79	Unidentified (multiple agents)	Unidentified (multiple agents)	146	How to source logging	Hardwoods
140	Variable oak leaf caterpillar	Hardwoods	80	Unidentified (multiple agents)	Unidentified (multiple agents)	147	How to source logging	Hardwoods
141	Variable oak leaf caterpillar	Hardwoods	81	Unidentified (multiple agents)	Unidentified (multiple agents)	148	How to source logging	Hardwoods
142	Variable oak leaf caterpillar	Hardwoods	82	Unidentified (multiple agents)	Unidentified (multiple agents)	149	How to source logging	Hardwoods
143	Variable oak leaf caterpillar	Hardwoods	83	Unidentified (multiple agents)	Unidentified (multiple agents)	150	How to source logging	Hardwoods
144	Variable oak leaf caterpillar	Hardwoods	84	Unidentified (multiple agents)	Unidentified (multiple agents)	151	How to source logging	Hardwoods
145	Variable oak leaf caterpillar	Hardwoods	85	Unidentified (multiple agents)	Unidentified (multiple agents)	152	How to source logging	Hardwoods
146	Variable oak leaf caterpillar	Hardwoods	86	Unidentified (multiple agents)	Unidentified (multiple agents)	153	How to source logging	Hardwoods
147	Variable oak leaf caterpillar	Hardwoods	87	Unidentified (multiple agents)	Unidentified (multiple agents)	154	How to source logging	Hardwoods
148	Variable oak leaf caterpillar	Hardwoods	88	Unidentified (multiple agents)	Unidentified (multiple agents)	155	How to source logging	Hardwoods
149	Variable oak leaf caterpillar	Hardwoods	89	Unidentified (multiple agents)	Unidentified (multiple agents)	156	How to source logging	

USGS 100K Quad - Location Map



How Aerial Surveys Are Conducted

Data represented on this map are based on aerial observations manually recorded onto a map. This procedure is considered both an art form and a form of scientific data collection, and is highly subjective. An observer only has a few seconds to recognize the color difference between healthy and damaged trees of different species; diagnose causal factors; correctly delineate the extent of damage; and precisely record this information on a georeferenced map. Air turbulence, cloud shadows, distance from aircraft, haze, smoke, and observer experience can all affect the quality of the survey. These data summaries provide an estimate of conditions on the ground and may differ from estimates derived by other methods.

Aerial surveys provide information on the current status for many causal agents, and are important when examining insect activity trends by comparing historical and current survey data over large areas.

Overview surveys are a snap shot in time and therefore may not be timed to accurately capture the true extent or severity of a particular disturbance activity. Aerial surveys can be thought of as the first stage in a multi-stage sampling design. Other remote sensing approaches, including aerial photography, electro-optical sensors, and specially designed aerial surveys with modified flight patterns, can be used to more accurately delineate the extent and severity of a particular disturbance agent. The preceding methods are often more costly than overview surveys, and are generally reserved to address situations of sufficient environmental, economic, or political importance.

Area surveyed by Al Dymerski

08/01- 08/03 & 08/15 - 08/17 /2006

Map Created: 01/12/2007

Projection: UTM NAD83 Zone 13
Author: J. Ross, USDA Forest Service

DIRECT ALL INQUIRIES TO:



W y o m i n g S t a t e F o r e s t r y D i v i s i o n
1 1 0 0 W e s t 2 2 n d S t r e e t
C h e y e n n e , W y o m i n g 8 2 0 0 2

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P O B o x 2 5 1 2 7
L a k e w o o d , C o l o r a d o 8 0 2 2 5

****DISCLAIMER****

Due to the nature of aerial surveys, the data on this map will only provide rough estimates of location, intensity and the resulting trend information for agents detectable from the air. Many of the most destructive diseases are not represented on this map because these agents are not detectable from aerial surveys. The data presented on this map should only be used as a partial indicator of insect and disease activity, and should be validated on the ground for actual location and casual agent. Shaded areas show locations where tree mortality or defoliation were apparent from the air. Intensity of damage is variable and not all trees in shaded areas are dead or defoliated.

The insect and disease data represented on this map are available digitally from the USDA Forest Service, Region Two Forest Health Management group. The cooperators reserve the right to correct, update, modify or replace GIS products. Using this map for purposes other than those for which it was intended may yield inaccurate or misleading results.

A data dictionary and digital copies of this map and the insect and disease data are available at: <http://www.fs.fed.us/r2/resources/fhm/aerialsurvey/>